

TECHNOLOGY READINESS LEVEL: 5

US PATENT # 6,172,377

KEY ELEMENTS HAVE BEEN DEMONSTRATED IN RELEVANT ENVIRONMENTS.

TECHNOLOGY SUMMARY

Sandia National Laboratories has developed a continuous fluid level fluorescent monitoring sensor. The method of determining the liquid level through a single immersed optical wave guide allows for a simple and mobile solution to fluid monitoring systems. Current technologies use monitored floating devices and require mechanical or magnetic coupling, which can pose problems for mobility and hazardous fluids.

The fiber optic technology of this Sandia invention uses a single waveguide, that can be produced from a non-corrosive polymer material, and a total internal reflection method to provide accurate and continuous measurements of fluid levels in a sealed container. The present Sandia invention can also measure the interface between two immiscible fluids of different refractive index. A comprehensive explanation of this technology has been published in Optical Engineering (August, 2000).



POTENTIAL APPLICATIONS

- Liquid pumps & dispensers
- Oil, water, and gas tanks on vehicles, aircrafts and remote devices
- Food processing & storage
- Water waste and treatment

TECHNOLOGICAL BENEFITS

- Mobile and simplistic
- No moving parts
- Continuous monitoring
- Safe for use with flammable or hazardous liquid
- Can operate over a wide range of wavelengths

TECHNOLOGY INQUIRY?

For more information or licensing opportunities contact us at

ip@sandia.gov

Refer to SD # 5911

or visit

<https://ip.sandia.gov>